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April 9, 2003 (12:22pm)

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REMARKS

Claims 21-44 remain in the application. The listing of the claims included amendments to Claim 21 and Claims 41-44 added in the Preliminary Amendment of January 23, 2003, which crossed in transmission with the present Office Action.

The Examiner objects to Claim 27 as being duplicated. It is unknown how this duplication arose, and it did not appear in the preliminary amendment. The above listing of the amended claims do not include the duplication.

The Examiner has rejected Claims 31 under 35 U.S.C. §102, ¶2 for indefiniteness. The claim has been amended to recite the two potentially interfering fields, as supported at page 6, lines 3-12 and page 8, lines 1-5. It is believed that the removal of charge from target particles is sufficiently definite.

The Examiner has rejected Claims 21, 24, and 32-35 under 35 U.S.C. §103(a) as being obvious over Kisakibaru et al. (U.S. Patent 5,945,008, hereafter Kisakibaru) in view of Tepman (U.S. Patent 5,527,438). In the Preliminary Amendment, Claim 21 has been amended to require that the target comprise a magnetic material. Neither Kisakibaru nor Tepman mention magnetic materials. Furthermore, it is asserted that Kisakibaru would be disadvantageously applied to sputtering magnetic material because Kisakibaru's requirement that the magnetic field be rapidly rotating (col. 10, ll. 45-49) would cause the sequentially deposited micro-layers of magnetic material to have a magnetization direction varying azimuthally. Furthermore, dependent Claim 45 has been added requiring the magnet array to be stationary, unlike Kisakibaru's rotating magnet ring.

The Examiner has rejected Claim 22 under 35 U.S.C. §103(a) as being obvious over Kisakibaru in view of Tepman and further in view of Hsu (U.S. Patent 5,589,039). The rejection is traversed. First, the Examiner's statement about the preamble limitation of depositing a magnetic film is still not given effect is not understood. The body of Claim 22 states that the target material retains magnetic properties when deposited on the substrate. That surely covers

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depositing a magnetic film. More importantly, the combination of Kisakibaru and Hsu are not obviously combinable because Kisakibaru's insistence on a rapidly rotating or oscillating magnetic field to generate an electric field is inconsistent with Hsu's stationary magnetic poles 74, 75 to create a somewhat uniform horizontal magnetic field across the wafer. Admittedly, Hsu teaches the use of a magnetic field to deposit magnetically aligned material, but his magnetic field is static and produced by stationary magnets. No art has been cited for use of a rapidly varying magnetic field in depositing a magnetic material. As argued for the first rejection, rapidly varying the magnet field, as done by Kisakibaru, has no known advantage in Hsu's process of depositing a magnetic film. Indeed, it is probable that Kisakibaru's rapidly varying magnetic field cannot be combined with Hsu's stationary magnetically aligned film deposition since the two fields interfere, each lessening the desired effect of the other. Further, the already deposited magnetic film of Hsu would magnetically short Kisakibaru's magnetic field, which is illustrated in FIGS. 3A and 3B as being above the wafer so that the desired electric field it produces around it is adjacent the wafer. Accordingly, neither Kisakibaru nor Hsu teaches any advantage for the use of their respective invention with the other's invention. Further, the two approaches are directed to different use and different effects and cannot be obviously or even conceivably combined. Although Kisakibaru makes wide ranging statements, he is interested either in etching or in depositing into a deeply patterned surface (col. 1, ll. 55-67). Hsu on the other hand is interested in forming magnetic read-write heads. No art has been cited for depositing magnetic materials in deeply patterned surfaces for such a purpose and indeed for any purpose. There is simply no suggestion for combining the references as done by the Examiner.

The Examiner has rejected Claims 23, 25, and 26 under 35 U.S.C. §103(a) as being obvious over Kisakibaru, Tepman, Hsu, and further in view of Boys et al. (U.S. Patent 4,500,409, hereafter Boys). These claims depend from claims believed to be in allowable form and should therefore also be allowable.

The Examiner has rejected Claims 27-31 and 36-40 under 35 U.S.C. §103(a) as being obvious over Alex (U.S. Patent 5,616,218) in view of Tepman, Boys, and Kisakibaru. Claim 27

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has amended to require that a stationary array of magnets produce a static field. Claim 41 submitted in the late filed Preliminary Amendment has a similar limitation. In contrast, Kusakibaru uses a rapidly varying magnetic field. As has been argued previously, Kusakibaru uses a rapidly varying magnetic field to produce a controllable electric field at the wafer surface either for etching control or for depositing into trenches. Kusakibaru suggests no advantage for applying his method to the deposition of magnetic materials, especially for the planar magnetic disks taught by Boy at col. 1, l. 54. and by Alex at col. 1, l. 19. Indeed, Kusakibaru's magnetic field is probably inconsistent with depositing magnetic materials.

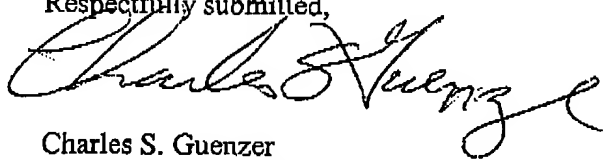
✓ The Examiner has indicated that Claim 31 would be allowable if rewritten in independent form and to overcome the §112 rejection. It has been so rewritten, but without the current amendments to Claim 27.

The Examiner's attention is drawn to commonly assigned patent application 10/068,669, being examined by S. VerSteg in Group 1762 and containing some claims similar to those of the present application.

In view of the above amendments and remarks, reconsideration and allowance of all claims are respectfully requested. If the Examiner believes that a telephone interview would be helpful, he is invited to contact the undersigned attorney at the listed telephone number, which is on California time.

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Respectfully submitted,


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